

# CONSTRUCTION MATERIALS TESTING

Lucideon specializes in material qualification and failure analysis on a range of materials used in the construction industry. A host of comprehensive laboratory testing services provides a one-stop-shop for material investigations of cement, concrete, aggregate, asphalt, terrazzo, mortar, stucco, stone, and steel.

## MATERIALS

### AGGREGATES

- Freeze/thaw testing
- Mineral composition
- Size analysis
- Reactivity

### ASPHALT

- Chemical analysis
- Emulsion water content
- Softening point

### MORTAR/GROUT

- Chemical analysis
- Match existing
- Failure analysis

### CONCRETE

- Petrographic analysis
- Chloride penetration
- Air void analysis
- Water-to-cement ratio

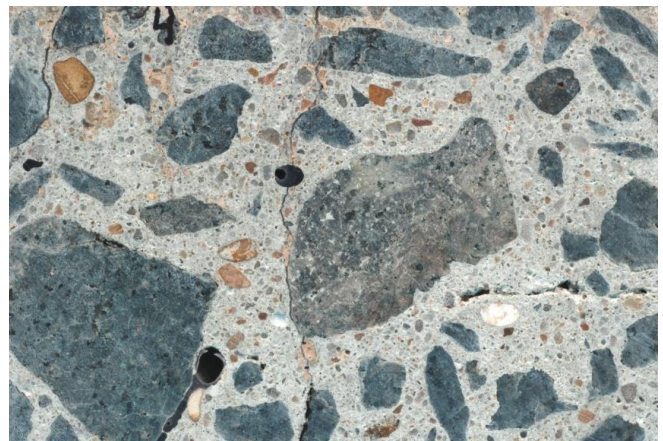
- Alkali-Silica reaction
- Failure analysis
- Sealant testing

### STEEL/REBAR

- Chemical analysis
- Corrosion assessment
- Strength testing
- Weld evaluation
- Weldability

### TERRAZZO

- Bonding failures
- Causes of cracking
- Discoloration investigations



## CAPABILITIES

### PETROGRAPHIC EXAMINATIONS

- Mineralogical assessment
- Hardened concrete
  - Extensive microscopy capabilities
  - Scanning Electron Microscope
- Characterization of air-void system

### CHEMICAL ANALYSIS

- Identification of material composition
- State-of-the-art instruments: SEM-EDS, XRD, XRF, ICP-OES, IC, FTIR, TGA, TMA

### CORROSION STUDIES

- Assessment of reinforced concrete structures with half-cell potential method
- Depth of chloride penetration in hardened concrete

### PHYSICAL TESTING

- Density, absorption and voids
- Compressive, tensile and flexural strength
- In-house machine shop for preparation of mechanical test specimens

### METALLURGICAL ANALYSIS

- Evaluation and qualification of welds
- Microstructural evaluation
- Weldability

### SPECIMEN PREPARATION

- Metallographic preparation, mount & polish